



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,233	07/11/2003	Toshiaki Hirano	041514-5395	2330
55694 7590 07/16/2007 DRINKER BIDDLE & REATH (DC) 1500 K STREET, N.W. SUITE 1100 WASHINGTON, DC 20005-1209			EXAMINER LIN, JAMES	
			ART UNIT 1762	PAPER NUMBER
			MAIL DATE 07/16/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/617,233	Applicant(s) HIRANO ET AL.	
	Examiner Jimmy Lin	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 and 29 is/are pending in the application.
- 4a) Of the above claim(s) 1-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-27 and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/24/2007 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 21-23 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miura et al. (U.S. Publication No. 2003/0087129) in view of Nishiki et al. (U.S. Patent No. 6,261,144).

Miura discloses a method of making a plasma display panel [0001], the method comprising:

feeding a substrate in a first direction in a vacuum atmosphere (Fig. 1; [0015]);
heating and evaporating a plurality of evaporation sources 14a,b [0046] at least one of which is located outside the display area in a second direction perpendicular to said first direction, said evaporation sources being positioned facing the display area of a substrate 12 (Fig. 1).

The evaporation sources are located in a second direction parallel to the display area, relative to one of the edges of the display area.

Miura teaches a method of making a PDP by evaporation, but does not explicitly teach a step of forming a protection film on the substrate of the PDP. However, Nishiki teaches a method of making a PDP (abstract), wherein a protection film can be formed by evaporation

(col. 10, lines 1-3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have formed a protection film on the substrate of Miura because Nishiki teaches that a protective film increases the lifetime of the PDP.

As to the added limitation of the evaporation sources being positioned outside of the display area when the substrate passes the sources, the substrate would have already passed the evaporation sources when the substrate is transported out of the chamber and the sources would at some point be positioned outside of the display area.

Claim 22: Nishiki teaches that the protection film is formed by evaporation (col. 10, lines 1-3).

Claim 23: An angle defined by a first line and a second line as described in the claim would necessarily form an angle equal to or smaller than 80 degrees when the substrate is being transported out of the substrate.

Claim 29: After deposition, the substrate is moved out of the chamber. During at least some time, a line extending from the evaporation sources in a direction toward the substrate and perpendicular to the first direction intersects a portion of the substrate outside the display area.

4. Claims 21-23, 25, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komada (U.S. Publication No. 2001/0038894) in view of Fumihiro (JP 11-335820).

Komada teaches a method of making a plasma display panel [0187]-[0190], including the step of forming a gas barrier film (i.e., a protection film) (abstract), the method comprising:

feeding a substrate 50 in a first direction in a vacuum chamber 302;

heating and evaporating an evaporation source located outside the display area in a second direction perpendicular to the first direction, said evaporation source being positioned facing the display area of the substrate ([0222]-[0223]; Fig. 13).

The evaporation source is located in a second direction parallel to the display area, relative to one of the ends of the display area.

Komada does not explicitly teach a plurality of evaporation sources. However, Fumihiro teaches that a plurality of vapor sources can be used in the vapor deposition of a PDP (abstract; Fig. 3). The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*,

325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a plurality of evaporation sources in the method of Komada because Fumihiro teaches that multiple evaporation sources are suitable for depositing films for a PDP.

As to the added limitations, the same interpretation is applied as discussed immediately above.

Claim 22: Komada teaches that the gas barrier film (i.e., a protection film) is formed by vacuum evaporation [0222]-[0223].

Claims 23 and 29 are rejected for substantially the same reasons as discussed immediately above.

5. Claims 21-23 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. Patent No. 6,215,246) in view of Smith (WO 01/31081).

Kim discloses a method of making a PDP (abstract), wherein a protection film 105 is formed on the PDP substrate. The protection film can be formed via an E-beam deposition in a vacuum (col. 2, lines 6-11; col. 4, lines 48-51; Figs. 2-3).

Kim does not explicitly teach (a) feeding the substrate along a passage and (b) heating and evaporating a plurality of evaporation sources to form the protection film such that at least one of the evaporation sources is located outside of the display area of the PDP. However, Smith teaches a method of forming a film via vacuum deposition (abstract). A plurality of point sources 46 can be arranged in a linear array (pg. 12, lines 23-29). At least one of the evaporation sources is located beyond the edge of the substrate 54 (Fig. 9). The substrate is moved at a constant velocity v in a first direction during deposition (pg. 15, lines 6-9). The linear design of the evaporation source helps to form a uniform film all the way to the very edges of the substrate (paragraph bridging pg. 16-17). Taking the references as a whole, it would have been obvious to one of ordinary skill in the art at the time of invention to have fed the substrate along a passage such that at least one of the evaporation sources is positioned out of the display area of Kim with a reasonable expectation of success. One would have been motivated to do so in order to have formed the protection film with greater uniformity.

Claim 22: Kim teaches that the protection film is formed by vacuum evaporation (col. 2, lines 6-11).

Claim 23: Smith does not explicitly teach a first line and a second line forming an angle equal to or smaller than 80 degrees, wherein the first line and the second line are respectively defined as a line connecting at least one of the evaporation sources located outside of the display area to a point on the display area closest to the evaporation source, and a line extending from the evaporation source in a direction parallel to a width of the substrate. However, Smith does teach that uniformity of the layer is best achieved when placing a deposition source beyond the deposition area (pg. 17, lines 1-5). One of ordinary skill in the art would have expected any angle formed by the first and second line to have achieved the advantage of forming a uniform layer, so long as a deposition source is placed beyond the deposition area. Accordingly, it would have been obvious to one of ordinary skill in the art at the time of invention to have placed a deposition source beyond the deposition area such that the first and second line form any angle, including an angle of the claimed range, with a reasonable expectation of success and with the expectation of similar results.

Claim 29: The references as a whole suggest that a line extending from at least one of the evaporation sources in a direction toward the substrate and perpendicular to the first direction intersects a portion of the substrate outside of the display area (Fig. 9 of Smith).

6. Claims 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miura '129 in view of Nishiki '144 as applied to claim 21 above, and further in view of the Applicant's admitted prior art.

The rejection is of record in the Office Action filed 1/24/2007.

7. Claims 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim '246 in view of Smith '081 as applied to claim 21 above, and further in view of the Applicant's admitted prior art for substantially the same reason as applied immediately above.

8. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miura '129 in view of Nishiki '144 as applied to claim 21 above, and further in view of Konishi et al. (U.S. Patent No. 5,957,743).

The rejection is of record in the Office Action filed 1/24/2007.

9. Claims 24 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komada '894 in view of Fumihiro '820 as applied to claim 21 above, and further in view of Konishi '743 for substantially the same reasons as applied immediately above.

10. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim '246 in view of Smith '081 as applied to claim 21 above, and further in view of Konishi '743 for substantially the same reasons as applied immediately above.

Response to Arguments

11. Applicant's arguments, see pg. 11, filed 5/24/2007, with respect to claims 24 and 26-27 have been fully considered and are persuasive. The 35 U.S.C. 112, 1st paragraph rejection of the claims has been withdrawn.

12. Applicant's arguments filed 5/24/2007 have been fully considered but they are not persuasive.

The Applicant argues on pg. 13 that Miura fails to disclose an arrangement in which at least one of the evaporation sources 14a and 14b is positioned outside a space in which the display area passes as recited in amended independent claim 21. However, the claim encompasses the case where the evaporation sources are located outside of the display area after deposition has finished and the substrate is being transported out of the chamber because the claim is not limited to such orientation of the evaporation source and the substrate *during deposition*. The claim requires that the "substrate...passes said evaporation sources". The substrate has passed the evaporations after deposition and when the substrate is being transported out of the chamber.

Art Unit: 1762

The Applicant argues on pg. 14 that Komada also fails to disclose an arrangement in which the heath 306 is positioned outside the display area. However, the claim is not limited to having such an arrangement *during deposition*, as discussed above.

Conclusion


13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Aoki et al. (5,770,921) teaches the vapor deposition of MgO.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is 571-272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JL
JL


TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER